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Exploring the 'New Urban World'

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The space economy does not display a uniform socio-economic landscape characterised by a monotone structure of cities, regions, nations or the world as a whole (Friedman 2007). On the contrary, despite globalisation processes and emerging cyber spaces, our world is not flat, but clearly spiky (see Fujita and Thisse 2003; Knox and McCarthy 2005; Kourtit et al. 2011; McCann 2007, 2008; Sassen 2006; Czarnitzki and Hottenrott 2011; Rodrıguez-Pose and Crescenzi 2008). Disparities and inequalities have attracted much attention in the history of regional science.

Over many years of regional science research, the focus has often and predominantly been on regions from the perspective of their dismal position as 'problem areas' or disadvantaged spatial entities. The space economy is characterised by spatial heterogeneities of all kind, and this has formed the main motivation for a great variety of regional development and intervention policies that have been put in practice as effective public policy tools in the post-WW-II period. Even though the results of such policies have been ambiguous and often not impressive, and also subject to criticism, regions—rather than cities—have continued to be the orientation points for many spatial policies all over the world.

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It is noteworthy that the growth potential of urban agglomerations in a regional policy system has often been neglected or undervalued. In the vein of the emerging interest in the '*urban century*' or the '*New Urban World*' (Kourtit 2015), we witness nowadays a renewed interest in cities—or urban agglomerations—as important growth engines for a regional or national economic system. This trend of scholarly interest and advanced research in the emerging urban world is less based on a traditional, narrowly defined analytical perspective on cities as externality-driven economic entities, but much more on the symbiotic interpretation of urban agglomerations as socio-economic powerhouses that—as a result of their relative abundance of human, social, cultural, technological, cognitive and infrastructural capital—are able to generate progress and wealth at both regional and national scales (see also Batty 2013; Caragliu 2015; United Nations 2012).

In a rapidly urbanising world, urban agglomerations appear to derive their strength from internal (centripetal) symbiosis forces, although their outreach is outward-oriented thanks to the great potential of modern centrifugal—material and virtual—network ramifications. These background conservations call for a new perspective and a strategic re-orientation on the future of urban systems, not so much from the perception of cities as 'problem issues', but more from the perspective of their role as new 'opportunity creators' in an open spatial and global socio-economic system (see e.g. Barufi and Kourtit 2015; Glaeser 2011). Consequently, urban agglomerations deserve full-scale attention in modern regional development policies, as the space economy is largely driven by '*made in the city*' beliefs.

It is nowadays widely recognised that urban agglomerations—notably metropolitan areas—find their origin and continuation in a broad set of competitive, centripetal and symbiotic forces, and are able to create a great diversity of socio-economic benefits to society at large (see also Deakin 2014; Florida 2004; Landry 2000). As argued by van Geenhuizen and Nijkamp (2012), knowledge, culture, creativity and social capital (e.g. 'buzz') are critical success conditions for modern cities. It is noteworthy that such cities do—worldwide—not only rise in number, but also in size and scope. And consequently, we observe at present also a rapid and ongoing rise in mega-cities hosting more than 10 mln people (see Kourtit and Nijkamp 2013; Rao et al. 2015). At the same time, the trend towards mega-agglomerations encapsulates and induces also 'uneasy' negative phenomena, such as urban sprawl, environmental threats, and density flaws (e.g. congestion, criminality).

Against the backdrop of the rise of cities and the rising importance of cities in spatial systems, the concept of 'smart cities' has recently gained much popularity (see Beall and Fox 2009; Campbell 2012; Caragliu et al. 2011a, b, 2012, 2014; Kourtit et al. 2012). Clearly, smart cities are empowered by digital technology, ICT and in general high-tech developments (see e.g. Graham 2004; Ishida and Isbister 2000; Kitchin 2014; Koizumi and Van den Besselaar 2005; Komninos 2008; Malecki 2002; Nijkamp and Kourtit 2012; Scott 2007; Shapiro 2006). But the resilience of modern cities in the era of globalisation is also increasingly determined by social capital and cognitive drivers (see e.g. Westlund 2014).

In general, the future of urban systems is contingent on a variety of critical performance factors related to the complexity of modern urban systems. Examples of drivers of such a complexity are inter alia: unforeseen population movements into and out of

the city (with far-reaching implications for spatial labour and housing markets), demographic composition shifts as a result of ageing processes (with drastic implications for the demand for private and public services), rising cultural diversity among socio-ethnic groups in the city (with important consequences for cohesion and social capital in distinct urban areas), the rising need for more smart specialisation in urban activity patterns (with important consequences for urban business profiles and urban educational systems), the emerging challenge to employ creativeness and innovativeness as strategic development tools in a spatially competitive economy (e.g. by addressing the issue of urban absorption capacity), the emergence of digital technology as facilitator of—or impediment to—new growth opportunities of urban agglomerations (leading to debates on the 'death of distance'), the sometimes alarming health and environmental conditions in large metropolitan areas (prompting questions on spatial disparities in quality of life), or the need to create a balance between accessibility/connectivity, on the one hand, and sustainable environmental quality, on the other hand. It is thus clear that urban force fields—now and in the future—are ripe of conflicting or contradictory developments and choices. And therefore, more scholarly attention for long-range or strategic urban evolution is warranted.

In the same spirit, the design and application of advanced research tools so as to understand, anticipate and cope with urban dynamics in an open and globalising society is urgently needed, in order to inform also decision-making bodies. An illustrative example of such an ambitious effort can be found in a recent study of the Centre Tyndall (2009), which addresses the issue of 'engineering cities', from the angle of the challenging question how cities can grow whilst reducing their emission and vulnerability. Indeed, governance of contemporaneous urban systems means coping with complex challenges galore.

This special issue of the *Annals of Regional Science* contains a selection of advanced contributions to a better understanding of the complex nature of city systems, seen from a multi-faceted and varied strategic perspective. A modern city appears to be a complex multi-actor organism that is driven by a multidimensional behavioural and policy force field. Urban economics has—based mainly on a market perspective—made a respectable attempt to come to grips with such forces from an economic-analytical perspective, but such analyses are hampered by serious limitations, so that urban-economic studies have either no general validity for different agglomerations in the world or lack concrete policy handles in a given situation. Alternatively, in another and more policy-oriented context serious contributions and arguments have been put forward to study the evolution of cities on the basis of 'command and control' measures which may include economic, land-use, social and architectural ingredients, but which regard the city as principally makeable. Clearly, in between a market and a planning perspective on the future of our cities, we may find a series of cognitive frameworks that aim at offering a proper understanding of urban evolution.

The present special issue does not take more a paradigmatic viewpoint, but aims to offer a panorama of important contributions to an enhanced understanding of the complex evolution of the urban 'organisms'. They are all original in nature and may be seen as novel studies on pathways for exploring the '*New Urban World*'.

The special issue opens with an important contribution of Roberto Camagni, in which he argues that one of the main problems today in urban development is that

of finding the necessary financial resources at a time of profound crisis of public, national and local finances. Therefore, a more balanced distribution of the surplus values of urban transformation between public and private sectors, in favour of the former, a since qua non. This is also advocated by a number of large international bodies and leading research centres. Whilst in the short run this may seem like a simple zero-sum game for the distribution of a given and fixed amount of resources, in the longer run the situation may turn into a virtuous, win-win situation, because a renewed, modernised, and more vibrant urban system might become the driver of renewed worldwide socio-economic development.

Next, Andrea Caragliu, Chiara Del Bo, Karima Kourtit and Peter Nijkamp investigate the role of uncertainty management in a competitive setting of urban innovative activities. The authors offer a new perspective on urban innovation and enter the debate on the contribution of non-material growth-enhancing factors, in particular, urban risk attitudes towards the socio-economic performance of cities. Cities offer the competitive and challenging environment where individual characteristics of actors may enjoy their highest returns; risk-loving and innovative individuals may sort in large urban agglomerations. Their study tests whether cities attracting such individuals and, thus, enjoying a more positive and open attitude towards risk, tend to innovate more. Their empirical results show that cities with such a more open and positive attitude towards risk *ceteris paribus* also tend to be more innovative.

People—in terms of size and composition—shape the urban 'ambiance' and hence are essential for urban sustainability. The late Larry Brown claims that urban neighbourhoods will become 'demographically diverse' and 'reflect socio'. The author indicates that a neighbourhood composition will be determined by class, more than culture, and hence, is largely driven by market forces such as social networks and personal preferences. Other aspects, such as acculturation in North-America, develop a substantial increase in intermarriage which may lead to a 'Blended America'. Clearly, immigration will continue, but from different origins; and the overall level will be lower, leading to a shrinking nation.

Cities are complex networks of human interaction, and Tomaz Dentinho describes new modes of spatial interaction in cities. In his cost-benefit approach he finds that the methodology capable of determining the impact of urban scenarios and policies through the use of calibrated bid rents of a spatial interaction model as hedonic price estimators of real estate has proven its usefulness and effectiveness for predicting the impacts of exogenous shocks in complex urban systems. This approach responds to the increasing requirement of decision support systems to assess complex effects of urban policies, because through linking the bid rents with hedonic prices, it is possible to connect the quantity estimates of a spatial interaction model with the value estimates of a hedonic price approach.

Clearly, quality to life is an essential element in shaping urban attractiveness. In this context, Elizabeth Delmelle, Jean-Claude Thill and Chenhua Wang investigate the spatial process of neighbourhood improvement and decline with respect to its quality-of-life profile in order to determine to what extent a neighbourhood's geographic situation impacts its probability of improving or declining, and whether spatial proximity is equally advantageous and detrimental. Their outcomes from a case study of neighbourhoods in the city of Charlotte illustrate that spatial dependence plays a strong

role in impacting biennial transitions, when examining the upper and lower quartiles during the period 2000–2010.

Finally, Ana Maria Bonomi Barufi, Eduardo Ameral Haddad and Peter Nijkamp conclude this special issue with a thorough analysis of industrial agglomeration advantages. In their study, the results indicate that there is no unique optimal local industrial mix to foster productivity in different technological sectors. These results seem to be robust to different model specifications and estimation strategies. In their empirical case study on Brazil, evidence shows that high-tech and low-tech manufacturing sectors benefit more from the urban or metropolitan scale in Brazil, followed by services associated with higher knowledge intensity.

It is clear that modern urban agglomerations exhibit an unprecedented dynamics, in term of density, morphology and urban sprawl (including polycentric developments, edge city formation, new town growth etc.). It will be hard to strike a balance between socio-economic welfare and environmental quality-of-life, social cohesion and civic participation, and spatial accessibility and mobility. There is clearly a need for a more strategically oriented perspective on urban evolution, which prompts the need for a broad and serious reflexion on 'the science of the city', seen from a multi-faceted panorama (see also Batty 2013). This special issue of the Annals of Regional Science offers an interesting sample of original contributions that serve to improve our basic understanding of the drivers and effects of current and future urban dynamics.

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